

**CLAIMS**

1. A charge coupled device having a charge transfer channel, the channel comprising a plurality of path-  
5 defining structures defining a principal path for the movement of charge through the channel, and a plurality of secondary paths converging on the principal path, such that in use signal charge generated across the entire width of the channel is fed into the principal  
10 path from the secondary paths.

2. A CCD imager of the type having an image area in which charge is generated and clocked to an output, comprising an image area divided into a plurality of  
15 channels by channel edges, at least some of the channels being further divided by path defining structures to create at least a principal path and one or more secondary paths; the principal and one or more secondary paths being arranged such that charge  
20 overflowing from the principal path is retained within the one or more secondary paths before the channel edges.

3. A CCD imager according to claim 2, wherein the  
25 secondary paths are arranged to converge on the principal path.

4. A charge coupled device according to any of claims 1 to 3, wherein the principal path is defined at one  
30 side of the channel.

5. A charge coupled device according to any of claims 1 to 3, wherein, the principal path is defined in the middle of the channel.

5 6. A charge coupled device according to any preceding claim, wherein the width of the channel is divided into the principal path and two or more secondary paths.

7. A charge coupled device according to any preceding  
10 claim wherein the path defining means allow signal charge above a predetermined amount to spill from either the principal path or a secondary path into the adjacent secondary path.

15 8. A charge coupled device according to any preceding claim comprising an anti-blooming structure disposed adjacent the channel edge in a path other than the principal path.

20 9. A charge coupled device according to any preceding claim wherein the path defining means comprise compensating barrier implants.

10. A charge coupled device according to any preceding  
25 claim wherein the path defining means comprise additional buried channel implants.

11. A charge coupled device according to claim 9 or 10, wherein the path has a V-shaped potential profile.

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12. A CCD comprising a channel for transferring charge, the channel comprising a plurality of path defining structures to create at least a principal path through the channel and one or more secondary paths  
5 across the channel width; the principal and one or more secondary paths being arranged such that charge spilling from the principal path fills the adjacent secondary paths in turn such that the minimum width of the channel is used to transfer the charge.

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13. A CCD according to claim 12, wherein the channel is formed in a serial register.

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